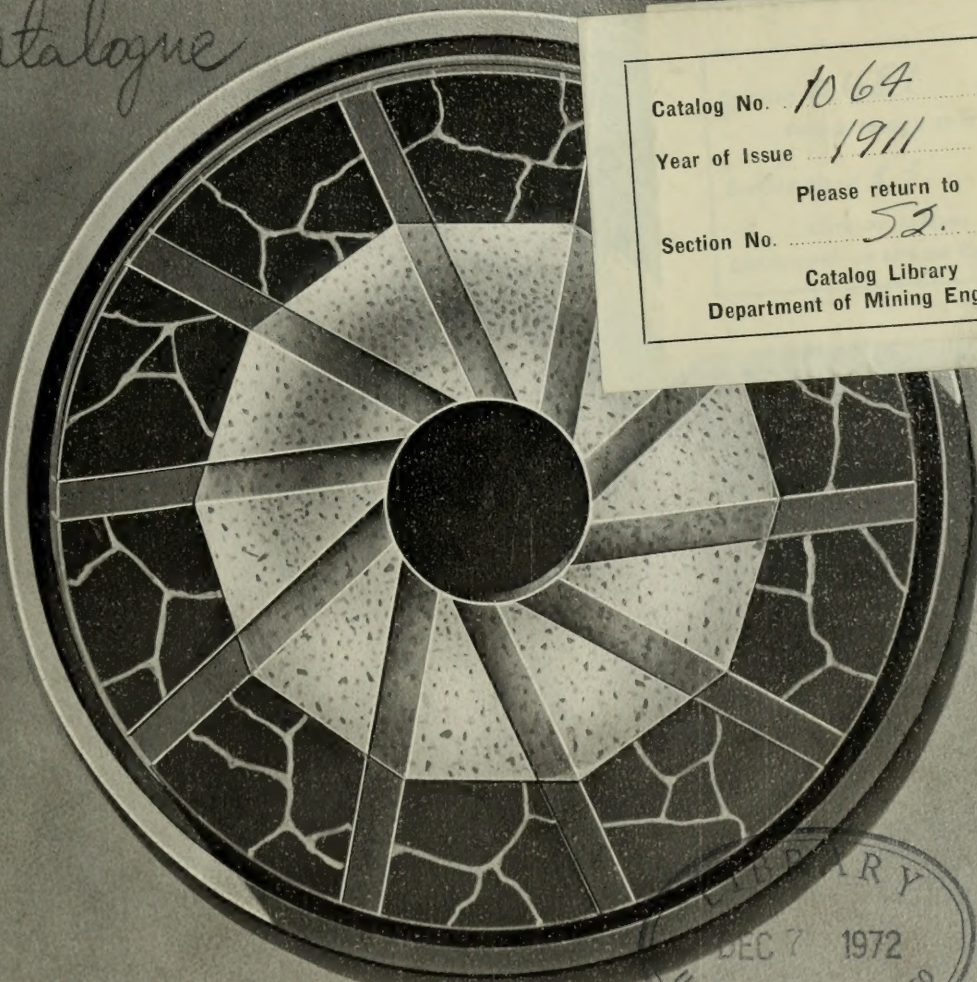


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Engineering

STURTEVANT

Mill Company, Boston

Catalogue

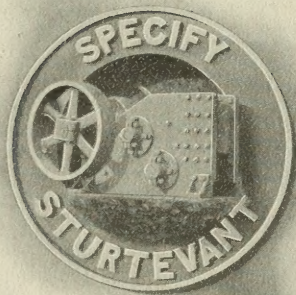


Catalog No. 1064
Year of Issue 1911
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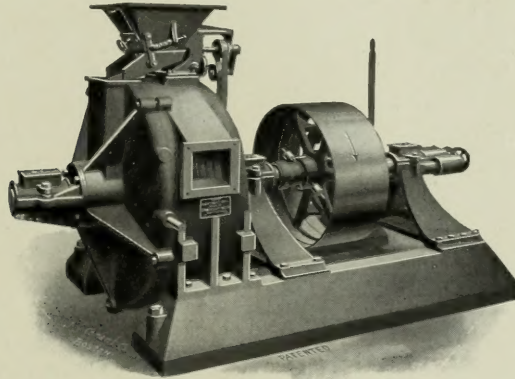


EMERY MILLS



ESTABLISHED 1883
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STURTEVANT MILL CO.



MANUFACTURERS AND EXCLUSIVE
SALES REPRESENTATIVES OF PATENTED

CRUSHING, GRINDING, SCREENING, MIXING,
REVOLVING SCALES and SACKING MACHINERY

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Paris

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Turin



ESTABLISHED 1883

The years bring experience;
Experience precedes excellence.

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THE STURTEVANT PLAN

Because performance equals expectation, a Sturtevant machine may be bought, by those unacquainted with it, on the following terms:

The purchaser agrees to set it at work on material adapted to it promptly, after arrival, and if within thirty days after it is received the purchaser does not find it satisfactory in every respect, it can be returned to seller's works, in good condition, ordinary wear expected, and with freight prepaid, and the buyer's obligations hereunder thus be closed and ended. If buyer's option to return is not availed of as is in this sale or return contract provided, the machine must be paid for.

MACHINES MAY BE TESTED HERE

Every prospective purchaser is invited to send samples (transportation prepaid) to our Testing Department at Harrison Square, Mass., which is equipped with machines of full size. Here, without charge, tests may be personally conducted, and as thoroughly as required to determine the adaptability of Sturtevant machinery. Trials are frequently ordered, and results reported. This department is largely availed of, and decisions of much importance to buyers are frequently made and costly errors avoided.

EXPERIENCE

The experience gained in producing, for so many years, rock reducing machinery of the highest class has a real value. Designs tested by thousands of users, and faults discovered and corrected form a strong basis for confidence. It is only gradually that the best machines are evolved. That they do not break is because we have been taught where to make them strong; that they give maximum outputs is because experience has taught who to make them effective. What each will do is known, and in most cases what each will not do. This company sells no machine that is not believed to be fit for its purpose. Machinery that is sure to run well is certain of appreciation.

STURTEVANT MILL COMPANY

HARRISON SQUARE **BOSTON** MASSACHUSETTS

NEW YORK

PITTSBURGH

ATLANTA

CHICAGO

ROCK EMERY MILL STONES

THE Grinders described in this catalogue are Millstone-Machines. Not the good old French Buhrs beloved by our grandfathers, but modern productions in every respect.

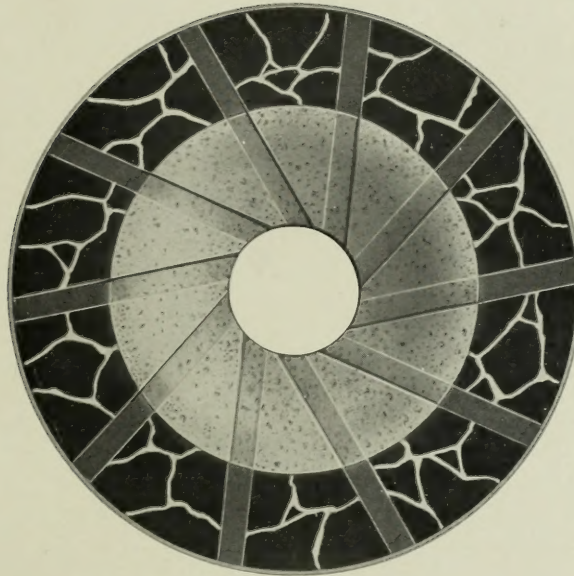
These up-to-date Grinders are made from Blocks of Rock Emery which is scarcely inferior to the diamond in hardness and much stronger and far more destructive to all substances brought in contact with it. That is to say: Rock Emery is an ideal abrasive. Hardness makes for durability, strength for shock endurance, and extraordinary cutting properties ensure rapid reduction of all material pressed against it. Emery faces cut. Every tooth in a man's head resents the slightest touch of emery. Emery is made sharp by nature, and, what is better, it stays sharp. However much worn every Emery face always remains a cutting face.

WHAT IS ROCK EMERY?

It is the hardest and strongest rock known. Drills cannot penetrate its ledges, and only powerful explosives can open its fissures and break its resistances.

It is a rare mineral, found in great masses only in parts of Turkey and in the Greek Archipeligo. Here deposits have been worked in the most primitive way, since history began, and the same crude methods of heating the ledges, then suddenly cooling and cracking them, and then breaking and prying apart, are practiced today.

ROCK EMERY MILL STONES



PATENTED

How then can Emery be shaped to form a Millstone? This is a part of the art of manufacture; but, in brief, only pieces of the rock are selected that have at least one face. These faces are set together by skilled hands to form the face of the Millstone, and this is ground off to smoothness by the hardest sand that can be found on the rugged New England beaches, and this sand is rubbed between the two millstones to be faced.

Rock Emery Millstones are made for purposes too numerous to mention, and to grind either hot or cold material. The parts of the Millstone may be cemented together by metal that is hard, like cast iron, or soft, like lead and spelter. Bosoms are of French Buhr or of Aesopus Stone, or solid blocks of Emery. The furrows are of softer stone that can be cut out as the faces are worn away.

ROCK EMERY MILL STONES

THEY CAN RUN FAST AND LAST

But it must not be supposed that these very heavy Millstones can be run in ordinary Mills at full speed, for they can only do best work in mills especially made for them. They are made however to fit any Mill frame and in all have the superior durability and cutting power that would be expected of a construction of such extraordinary materials. It is only in the Special Sturtevant Mills that their full grinding economics can be developed. In such Mills, Rock Emery Millstones are by far the Fastest Grinders Known. They have nearly deprived us and all others of the ancient business of Buhr Stone Manufacture. The good old French Buhrs died hard, but the "Jolly Miller of the River Dee" survives only in blessed memory.

FINE CRUSHING

An Emery skirt seldom requires to be touched with a mill pick if the Millstones are fed with finely crushed material. All that is required of the miller is to keep the bosom and the furrows in the best condition, thus allowing free entrance and discharge of the material.

The one condition absolutely necessary however to the proper working of Emery Millstones is that the feed be finely crushed.

Emery is not damaged by ordinary heat and stones made to work hot can be run at high speed with greatly increased output over other Millstones.

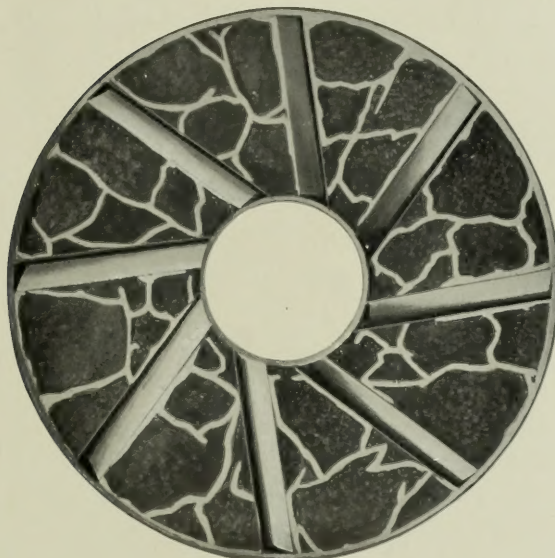
As soon as the Emerystones have been run a short time, the metal in the face wears a trifle lower than the Emery blocks, exposing sharp, abraiding edges, which cut like files.

COST

The cost of EMERY MILLSTONES is only slightly in excess of good French Buhrstones and they are of far greater value.

Until a harder, more abrasive, and stronger substance than Emery becomes available, it is not likely that this Millstone can be displaced. Not only is it the least expensive of modern Grinders, and the most rapid, but in all respects it is the best for reducing the long list of materials to which it is adapted.

ROCK EMERY MILL STONES



PATENTED

SPECIAL EMERY STONES

Whatever may be thought of the possibility of improving the Rock Emery Millstone, the MILLS required for their use have been under constant improvement. Experience has shown how to design them—and they can now run safely at speeds that bring out all the good points of this wonderful substance.

The Mills are nearly automatic, and therefore able to do the finest and most rapid work in the hands of ordinary millmen.

SIZES—Emery Stones

(For Vertical Emery Mills, to Fit our Frame)				(For Horizontal Mills)			
			Code Word				Code Word
24 inch	-	-	Kable	30 inch	-	-	Kespr
30 "	-	-	Kabrie	36 "	-	-	Kever
36 "	-	-	Kacada	42 "	-	-	Reyop
42 "	-	-	Kair	48 "	-	-	Kezip
				54 "	-	-	Keqof

Crush Fine. Work in good Crushers costs 1-5 of that in the best Mill. Therefore, do as much work in the crusher as you can.

FRENCH BUHR MILLSTONES

We make these now To Order Only, faced and furrowed. Also, Esopus Millstones, faced and furrowed.

VERTICAL ROCK EMERY MILLS

MILLS IN WHICH THEY ARE USED

Almost as much as the Rock Emery Millstones have the Mills in which they are used been subject to improvement.

They are of two types:—In the first the millstones run in Vertical planes and are termed vertical mills. They constitute for materials not too hard, the cheapest, simplest and most rapid fine grinding machines known. They grind to great fineness and have capacities from one to fifteen tons per hour according to size of mill and fineness of output.

NO SCREENS

They are not dusty, or noisy, have no Fans, Screens, or auxiliary machinery, and deliver a uniformly finished fine product. Attach a belt, and a Vertical Mill will run, and keep running, longer without repairs, than any other grinder of its class. Hundreds of the largest producers in various countries testify to their efficiency.

These splendid Rock Emery Mills have greater capacities than any other Fine grinders. They grind fine and they last.

They need no foundation, may be bolted to any strong mill floor, and are ready to run as soon as the belt is on.

Emery Mills are fitted with Improved Patent Rock Emery Millstones between which the grinding is done. No pains have been spared to perfect these splendid Grinders.

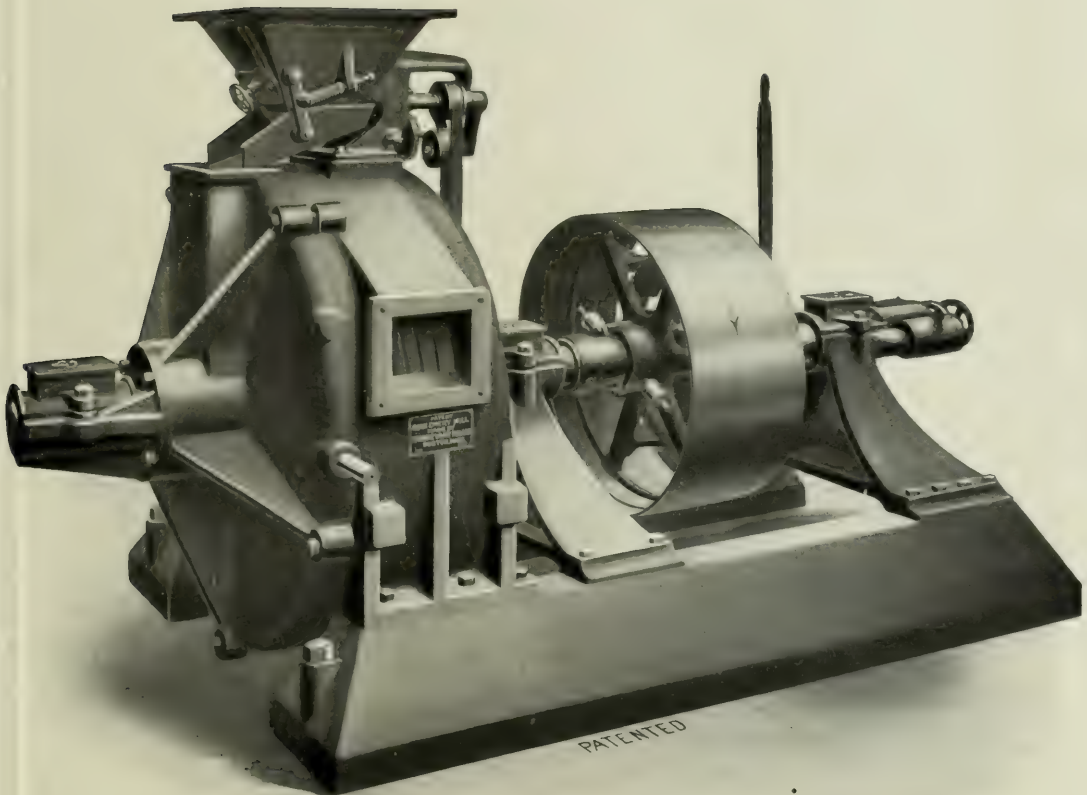
The grinding action is perfect, a continuous squeeze and rub on the material to be ground from the time it enters the mill until it is discharged, a finished fine product. For material adapted to them, these are the cheapest producers known.

The grinding surfaces are composed of massive Emery Rock, the hardest, sharpest and most durable commercial substance known. This Emery is built up into Millstones and in action is the same as the old fashioned Millstones used for centuries; but they far exceed these in durability, and can run fast and grind fast—because no substance equals Emery Blocks in cutting power.

SUPERIORITY IS APPARENT

Being harder, Emery Millstones wear three times as long as any others and therefore require little attention. Being cutting, they file everything they touch. They do not glaze but retain wonderful abrasive powers until worn out. Not being damaged by ordinary heat, they may be run fast, with increasing ability and output.

VERTICAL ROCK EMERY MILLS



42-inch Vertical Emery Mill—The largest ever constructed.
Showing Shaker Feed.

This machine has twice the capacity of any grinder of its class.
It reduces to great fineness without screens.
Capacity from 5 to 15 tons per hour.

VERTICAL ROCK EMERY MILLS

END THRUST

The end thrust of the mill shaft is taken on improved ball bearings with large steel Balls placed between four washers (two of steel and two of special composition).

A strong spring in this bearing allows the grinders to spring apart to let out iron bolts or ungrindable substances that might injure the Stones. But no stops are required to prevent the stones from coming together when grinding.

The spring bearing greatly increases the capacity of these Mills, for it allows them to run at high speed without dangerous heating. This yielding pressure can be increased by the regulating screw at the end of the shaft.

With the unequalled cutting power of Emery Stones these Mills have, on moderately hard substances, an enormous output.

FEED

The feed arrangement of Sturtevant Vertical Mills is simple, direct and effective; always giving the Mill an even amount of material. A steady feed increases the output and insures regular running. The Feed may be started or stopped at will, without shutting down the mill, and is adjustable for feeding a large or small amount of material.

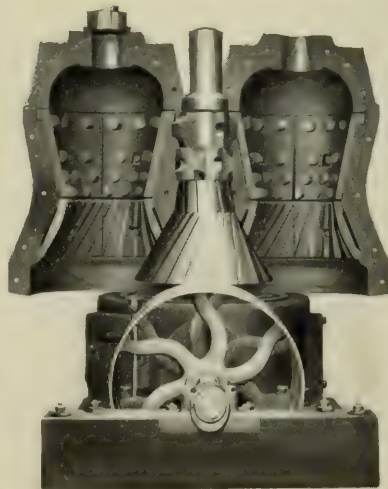
The adjustment of the Stones for coarse or fine grinding is a simple matter, and is accomplished by turning the hand wheel at the end of the shaft.

Rock Emery Millstones are made sharp, and stay sharp longer than any material ever used in grinding. To conclude

VERTICAL EMERY MILLS AND ROTARY FINE CRUSHERS

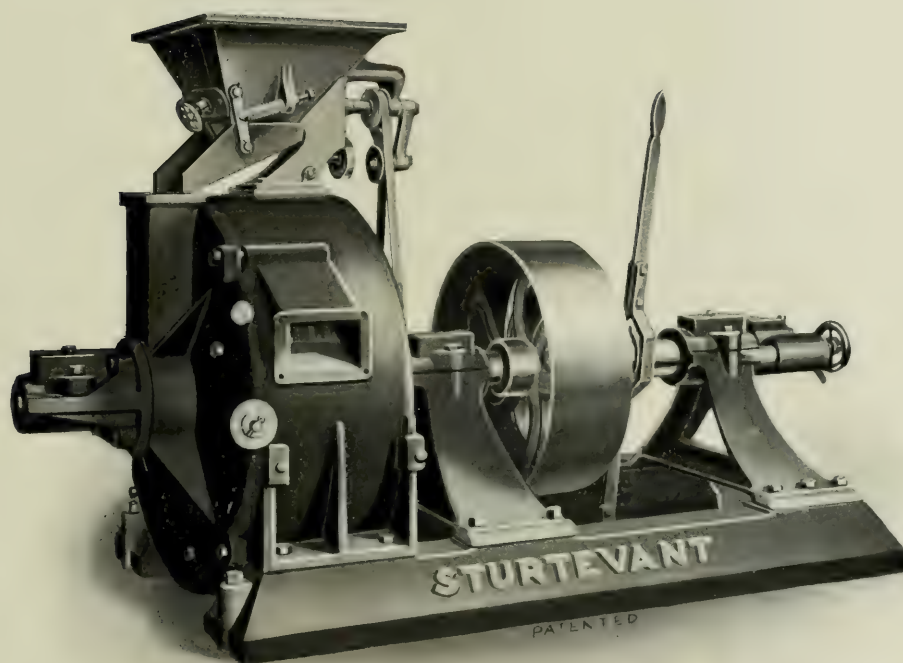
form a complete and inexpensive plant of large capacity, for reducing nearly all soft and moderately hard rocks from the size of one's head to almost any fineness. (See Catalogue No. 63.)

It is the simplest and, by far, the most economical outfit to install. No foundations, no screens. Both machines are complete, ready for belt when shipped.



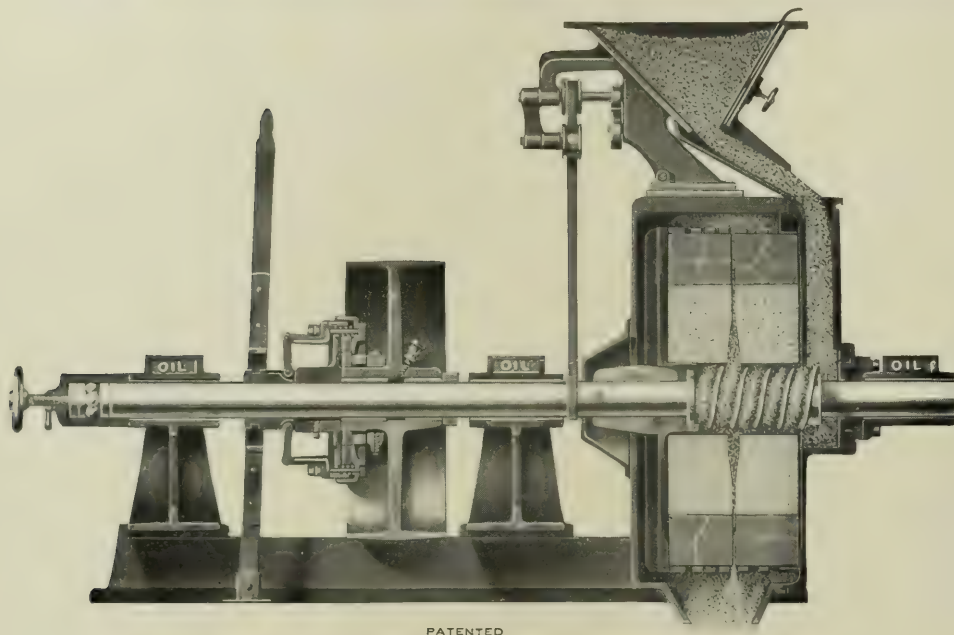
"Open Door" Rotary Fine Crusher

VERTICAL ROCK EMERY MILLS



36-in. Vertical Emery Mill.
Capacity 2 to 7 tons per hour. No Screens.

VERTICAL ROCK EMERY MILLS



The above cut shows the vertical Mill, and all its parts. They are so well known that they scarcely require minute description. They are massive, easy running machines, the latter because the thrust is taken by the highly developed ball-bearings and because of the long, effectively lubricated, and protected-from-dust shaft embracements. The massive shaft carries the stones without vibration.

The feed mechanism is durable. The Stones seldom need dressing, and the bearings can be relied on to give no trouble. These Mills are massive and, as may be seen in the illustration, are in every way substantial. The removable track (see page 14) furnishes an easy road for the removal and balancing of stones, and saves much heavy lifting.

Vertical Mills, not fitted with Emery Stones are unable to grind even moderately hard materials successfully. All attempts to make them do such work have failed, because no Buhr Stone is sufficiently hard, and the heat generated by fast running cracks them.

SIMPLICITY

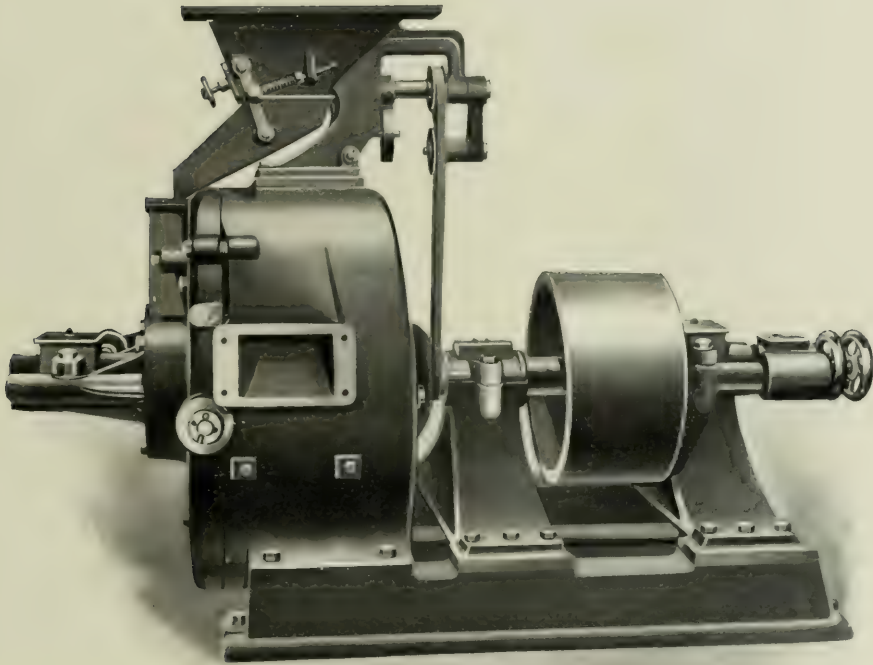
Simplicity, which always means economy and utility, is of the utmost importance, and we think you will agree that we have attained it in these machines.

The only wearing parts in Vertical Emery Mills (of much importance) are the Stones.

These are far more durable than anything else that can be constructed, until a stronger abrasive than Emery is discovered.

The Bedstone in Vertical Mills is bolted to the mill frame, and never has to be removed until worn out.

VERTICAL ROCK EMERY MILLS



PATENTED

30-inch Vertical Rock Emery Mill

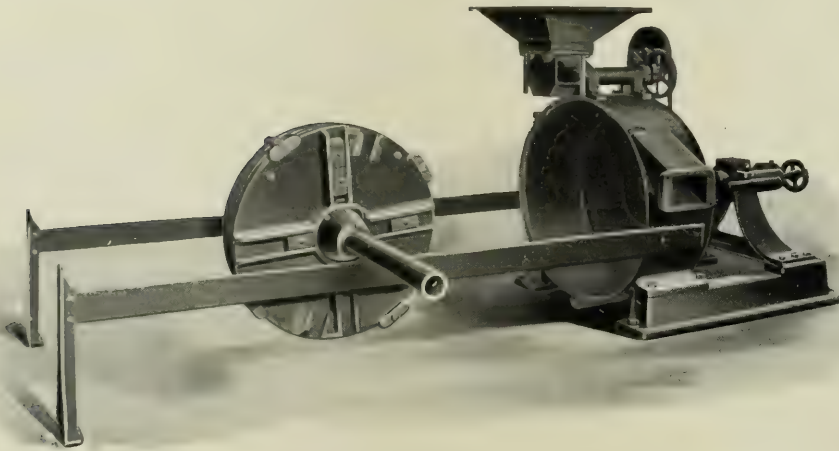
Capacity 2 to 4 tons per hour.

No Screens.

To open the Mill for dressing, only four side bolts need be removed.

Neither belt, spout, nor feed arrangements are disturbed. The Stones are bolted in place and cannot be set wrong, or get loose. The whole operation is so simple, direct and easily accomplished, that a purchaser is never found for old Mills who has once seen this up-to-date machine.

VERTICAL ROCK EMERY MILLS



PATENTED

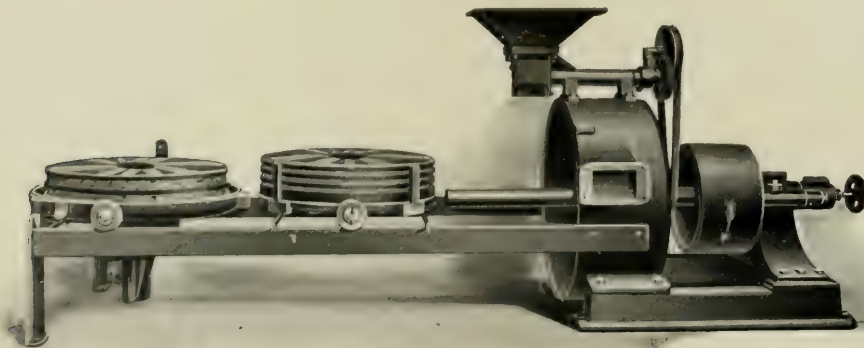
Showing Balance Arrangement.

The runner is firmly bolted, can give no trouble, and cannot be put in wrong.

BALANCING

On the Back of the Runner Pot, four grooves hold the balance weights. Balancing these Millstones is easy. Moving these weights, in or out, gives perfect poise.

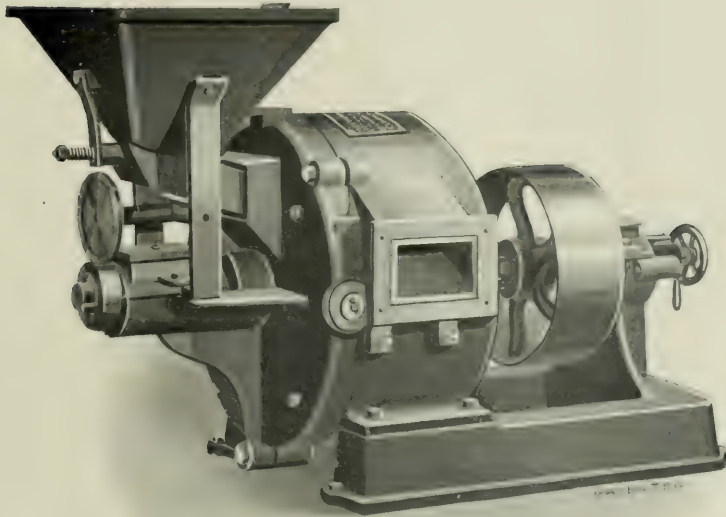
Removable tracks are furnished with each Mill and make a ready means of handling for balance.



PATENTED

Shows 24-inch Vertical Mill open, and stones run out for dressing. They are turned over to this position without lifting.

VERTICAL ROCK EMERY MILLS



24-inch Vertical Emery Mill.
Capacity 1 to 2 tons per hour.
No Screens.

The frame of Vertical Mills is of cast iron, designed to give strength. The base is extra wide, and the mill can be driven from above or below, at nearly any angle. It discharges right or left as ordered.

Sizes Made — Capacities and other details of Vertical Emery Mills
(OVER ALL DIMENSIONS)

Code Word	Size	Length with Track	Length without Track	Width	Height	Pulley inches	Speed Rev.	Approx. Horse Power	Cap. per Hour according to material and fineness	Approx. Weight nett	Approx. Weight Gross
LABAB	24 in.	10ft. 3in.	5ft. 8in.	3ft. 2in.	4ft.	20 x 6	750	12 to 15	$\frac{1}{2}$ to 2 tons	2000 lbs.	2300 lbs.
LACOF	30 in.	11ft. 6in.	8ft. 2in.	3ft. 5in.	4ft. 6in.	20 x 8	650	18 to 20	1 to 4 tons	3500 lbs.	4300 lbs.
LADRI	36 in.	14ft. 6in.	9ft. 9in.	4ft.	5ft. 1in.	30 x 12	550	30 to 35	2 to 7 tons	6000 lbs.	7000 lbs.
LADOS	42 in.	17ft. 6in.	11ft. 5ft.	5ft.	6ft.	36 x 16	350 to 450	45 to 80	5 to 15 tons	12000 lbs.	13000 lbs.

Subject to change without notice.

HORIZONTAL ROCK EMERY MILLS

FOR HARDER MATERIALS

**Such as Hard Limestone, Chrome, Manganese, Cement, Phosphate,
Graphite Colors, Etc.**

**Horizontal Emery Mills are fitted with Patent Rock Emery Millstones
which pulverize the material to a fine uniform powder without screens.**

These machines are similar in action to the Vertical Emery Mills illustrated on the preceding pages, but are designed for grinding harder materials.

These massive Direct running machines are especially designed for Emery Stones, and to reduce harder materials to fine powder without the use of screens or other devices. They are the heaviest and most substantial under Runner Mills ever built, and are fitted with 42-inch Emery Mill Stones. No foundations are required, for they will run smoothly and quietly on any good mill floor .

The large Vertical shaft runs in an oil bath, dust proof, and on a ball bearing step. This enables the Mill to run at high speed with no danger of hot bearings.

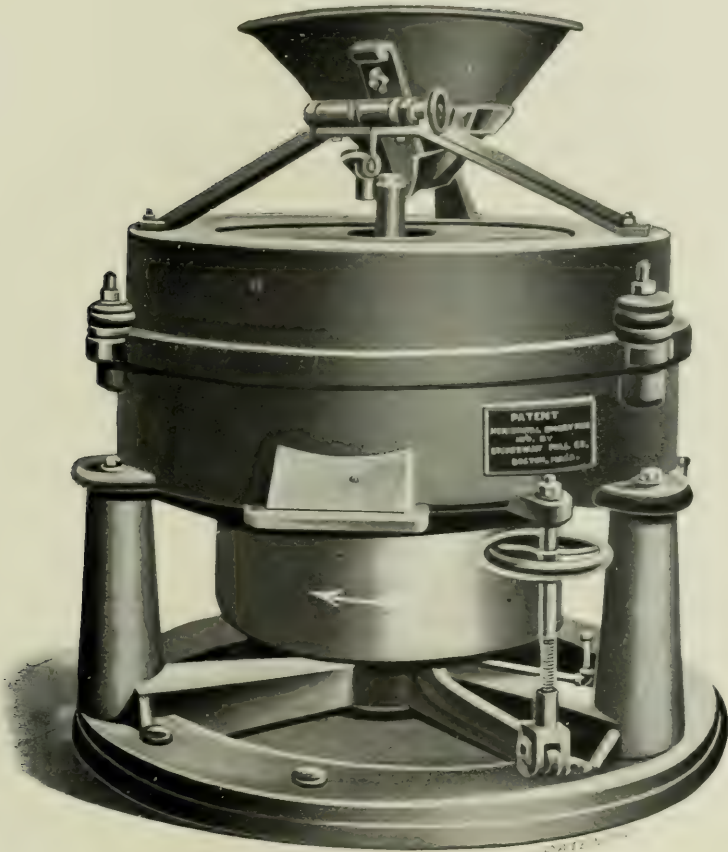
GEARED MILLS ARE ONLY MADE TO ORDER

The Horizontal Emery Mill, like all Sturtevant productions, has few parts. It is remarkably simple and convenient, and is so nearly automatic that it can be run successfully by inexperienced labor.

The wearing parts are few and easily replaced. Stone dressing with Emeries is an inconsiderable item.

This Horizontal Direct Runner, owing to its simplicity of construction and fine work, is a great favorite. There are many hundreds in use.

HORIZONTAL ROCK EMERY MILLS



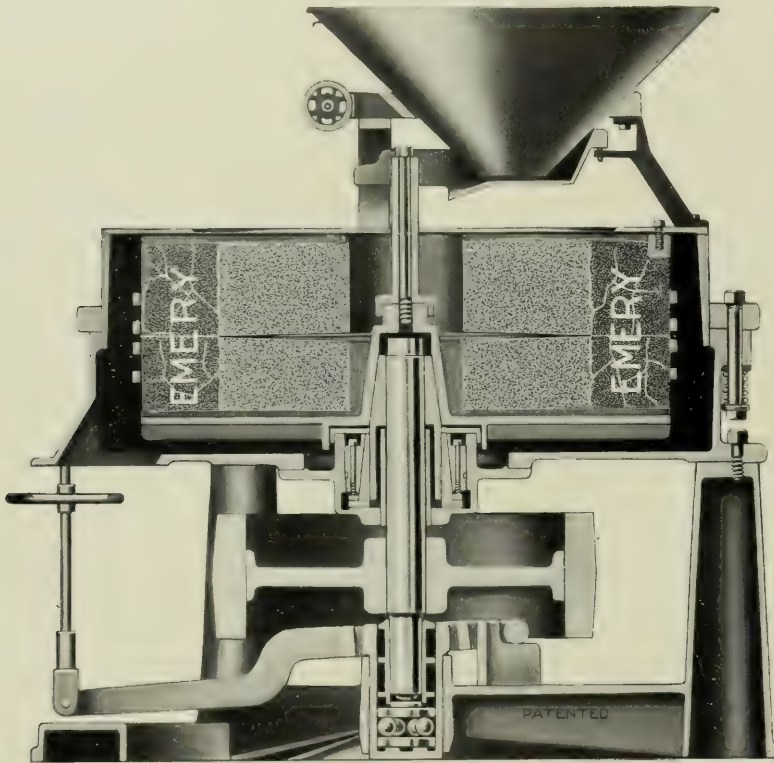
Horizontal 42-inch Direct Runner Emery Mill.
Capacity 1 to 3 tons per hour.

SPECIFICATIONS, 42" HORIZONTAL EMERY MILL
OVER-ALL DIMENSIONS

*Code Word	Size	Length	Width	Height	Pulley inches	Speed Rev.	Approx. Horse Power	Cap. per Hour according to material and fineness	Approx. Weight net	Approx. Weight Gross
MAABA	42"	5 Ft.	5 Ft.	5 Ft.	30"x10"	300	18	1 to 3	5200 lbs.	5500 lbs.

*When with IDLERS add the word "MAFO"

HORIZONTAL ROCK EMERY MILLS



Horizontal 42-inch Direct Running Emery Mill.

The bedstone is bolted strongly to the top case, and is lowered with it directly upon the runner stone with which it is then in perfect adjustment. The clamp ring is then tightened and grasps the bedstone case, firmly holding it and its stone immovably in position. The runner can now be lowered away from the bedstone by the hand wheel to such a distance as gives the fineness of grinding required.

This perfectly simple and accurate adjustment of the Mill stones is of great value, enabling ordinary help to obtain good results.

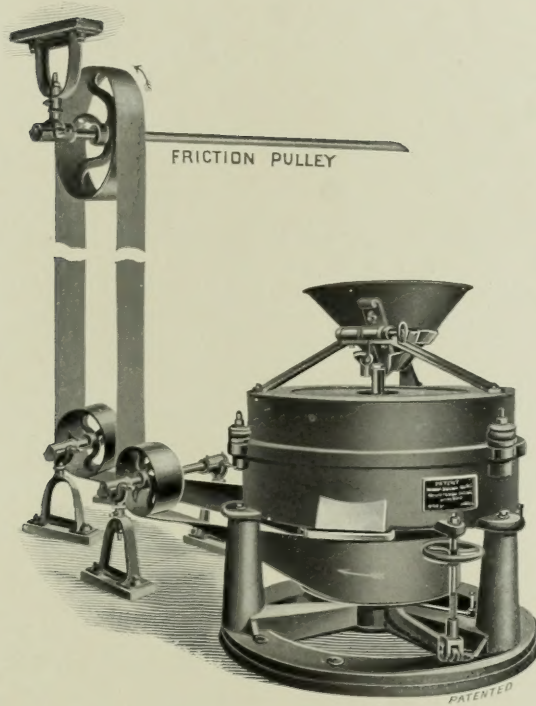
When the stones are removed for dressing they cannot be wrongly replaced. The runner stone is firmly fixed to the Vertical shaft and is sure to run right.

BEARINGS

The special bronze Upper Bearings are carefully designed for high speed, have a large amount of surface and give no trouble. These are made in sections to take up wear, and are self-oiling and dust proof. They always run cool.

The lower Bearing of the shaft runs in an oil well upon buttons, and these upon balls of large size. This is the best mill step bearing ever produced.

HORIZONTAL ROCK EMERY MILLS



Belting Arrangement of Horizontal Direct Running Emery Mill.

The Horizontal Direct Running Emery Mill has a driving pulley belted to idlers, and to a factory shaft. See illustration above.

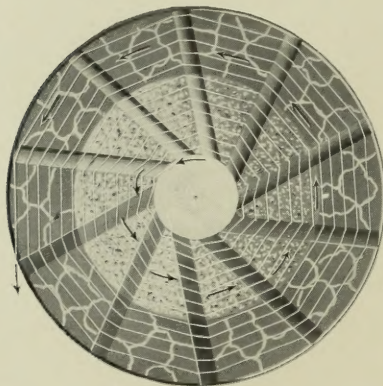
This is the most popular construction and is certainly good.

The stones seldom need dressing. It is an easy runner, noiseless and dustless.

No better machine has been made at these Works, and its capacity is unequalled on hard work.

ROCK EMERY MILL STONES

MILLSTONE GRINDING ACTION



PATENTED

No other device has the same grinding action as the Millstone, and its long, successful career proves its merit.

It is claimed that on very fine work the output of Millstones, grinding to a given mesh, is much smoother or finer than the same mesh material produced by other means. This is due to the fact that no other Grinder has the complete and ideal grinding action noted in Millstones, whereby each particle is rubbed upon again and again before it can escape.

Material fed at the center is immediately gripped with the enormous pressures between the Millstones upper and nether, and goes through such continuous rubbing, shredding, and tearing action, around and around, as it works its way by centrifugal force to the periphery where it is discharged. Consider the great amount of grinding surface (with a 36" Millstone over 1,000 sq. inches), the speed of which is comparatively low at the center and high at the rim, whereby all particles are subject to two tearing or differential actions under high pressure, at varying speeds, at the same time.

It is not strange that the Millstone cannot be extirpated by even modern machines. It is recorded in Bible history, and was used long before even those books were written, and now that it is made of rock harder than the hardest that could then be fashioned it is likely to be popular for yet many generations, and to grind finer and faster than ever.

CATALOGUE No. 64